UNIT II - FIELDS

Introduction to Field Theory

Fields: A region of 3-D space where an interaction can occur

Examples:

Objects with mass set up gravitational fields which affect other objects with mass

Objects with electric charges set up electric fields which affect other objects with charge (or even neutral ones).

Objects with magnetic properties set up magnetic fields which affect certain bodies.

Gravitational Fields:

A region of space that affects mass

- we use field lines(vectors) to show the strength and direction of the field.

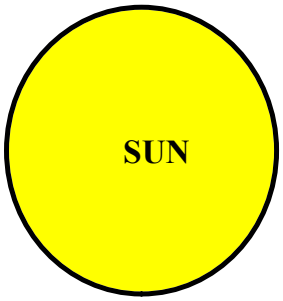
- direction of a gravitational field is always towards the mass

- close together field lines represent strong fields, spread out field lines are a weaker field.

- *Remind students that we can use the equation to determine the force Fg = mg.*

- We use a shortcut, g = 9.80 N/kg, and this is the gravitational field strength It shows how strong the field is at a particular point.

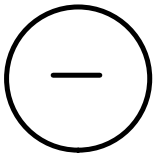
Draw the fields around...



Electric Fields...

http://www.upscale.utoronto.ca/GeneralInterest/Harrison/Flash/EM/FieldLines/FieldLines.html

Mapping (Drawing) Electric Fields



positive test charge